ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE
ER REGULATORY CONTACT RECORD

Date/Time:	October 5, 2005			
Site Contact(s):	Julie Keating			
Phone:	303-966-5205			
Regulatory Contact:	Carl Spreng	Raj Goyal	Susan Griffin	Robyn Blackburn
Phone:	303/692-3385	303/692-2634	303/312-6651	303/312-6663
Agency:	CDPHE	CDPHE	USEPA	USFWS Liaison to USEPA

Purpose of Contact: Documentation of Additional Sediment and Surface Water ESLs, Surface soil and Subsurface Soil PRGs, and Volatilization PRGs not included in the CRA Methodology

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Discussion

During the development of the Comprehensive Risk Assessment (CRA) Work Plan and Methodology (CRA Methodology) (DOE 2004) ecological screening levels (ESLs) and preliminary remediation goals (PRGs) were developed for detected analytes contained in the Soil and Water Database (SWD). Since the publication of the CRA Methodology, it has come to our attention that several analytes with low detection frequencies were not included in the ESL and PRG lists in Appendices A and B of that document.

Tables 1 and 2 list analytes in surface water samples and in sediment samples that have detections and were not included in the original search for ESLs during the development of the CRA Methodology. ESLs were then developed for 24 analytes reported for surface water samples (Table 1) and for 15 analytes reported for sediment samples (Table 2) using the hierarchy of published sources as defined in Appendix B of the CRA Methodology. Toxicity reference values were not available in the published sources for the other analytes listed on Tables 1 and 2 and therefore, ESLs were not developed for those analytes. The surface water ESLs for nitrite and uranium have also been updated (Table 1).

In addition, the manganese ESL for soil for the prairie dog receptor was revised because it was calculated incorrectly in the CRA Methodology. Recalculation of the manganese ESL using the exposure parameters presented in the CRA Methodology results in an ESL of 1519 milligrams per kilogram (mg/kg). In addition, the total PCB ESLs for soil for the kestrel and the total PCBs ESLs and threshold ESLs for the coyote (carnivore and generalist) were revised because they were calculated incorrectly in the CRA Methodology. The soil-to-small mammal BAF is dependent on the soil-to-plant and soil-to-invertebrate BAFs. The soil-to-small mammal BAF presented in the CRA Methodology incorrectly used a soil-to-invertebrate BAF estimated from the log K_{ow} model. This was incorrect because a more appropriate regression-based soil-to-invertebrate BAF was available and should have been chosen for use over the log K_{ow}-based value. Recalculation of the PCB ESLs results in revised ESLs for total PCBs as follows: 0.886 mg/kg for the kestrel; 5.19 mg/kg for the coyote carnivore and 6.04 mg/kg for the threshold ESL for the coyote carnivore, and 3.32 mg/kg for the ESL for the coyote generalist and 3.88 mg/kg for the threshold ESL for the coyote generalist.

Tables 3 and 4 list analytes in surface soil, sediment and subsurface soil samples that have detections and for which PRGs could be developed (i.e., toxicity values were available in the sources defined in the CRA Methodology). PRGs were developed for 10 additional analytes reported for these media (Table 3 and 4) using the sources that are defined in Appendix A of the CRA Methodology.

Tables 5 and 6 list volatile organic compounds (VOCs) in subsurface soil/subsurface sediment and groundwater, respectively, that had detections and for which PRGs could be developed (i.e., those analytes that are included in the Johnson and Ettinger model as described in Appendix A of the CRA Methodology). PRGs were developed for 13 additional VOCs in subsurface soil/subsurface sediment and seven VOCs in groundwater.

These additional ESLs and PRGs have been added to the screening procedure for the CRA.

Reference:
DOE, 2004, Final Comprehensive Risk Assessment Work Plan and Methodology, Rocky Flats Environmental Technology Site, Golden, Colorado, September.

Attachments:
Table 1 Additional Surface Water ESLs not included in the CRA Methodology
Table 2 Additional Sediment ESLs not included in the CRA Methodology
Table 3 Additional Surface Soil PRGs not included in the CRA Methodology
Table 4 Additional Subsurface Soil PRGs not included in the CRA Methodology
Table 5 Additional Subsurface Soil/Subsurface Sediment Volatilization PRGs not included in the CRA Methodology
Table 6 Additional Groundwater Volatilization PRGs not included in the CRA Methodology

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Contact Record Prepared By: Julie Keating

Required Distribution:

M. Aguilar, USEPA
H. Ainscough, CDPHE
J. Berardini, K-H
B. Birk, DOE-RFPO
L. Brooks, K-H ESS
G. Carnival, K-H RISS
N. Castaneda, DOE-RFPO
C. Deck, K-H Legal
N. Demos, SSOC
S. Garcia, USEPA
S. Gunderson, CDPHE
S. Johnson, K-H ESS
M. Keating, K-H RISS
L. Kimmel, USEPA
D. Kruchek, CDPHE
D. Mayo, K-H RISS
S. Nesta, K-H RISS
L. Norland, K-H RISS
E. Pottorff, CDPHE
A. Primrose, K-H RISS
M. Roy, DOE-RFPO
R. Schassburger, DOE-RFPO
S. Serreze, K-H RISS
D. Shelton, K-H ESS
C. Spreng, CDPHE
S. Surovchak, DOE-RFPO
J. Walstrom, K-H RISS
K. Wiemelt, K-H RISS
C. Zahm, K-H Legal

Additional Distribution:

R. Goyal, CDPHE
R. Blackburn, EPA
S. Griffin, EPA

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Table 1
Additional Surface Water ESLs
not included in the CRA Methodology

ECOI	Acute (ug/L)	Chronic (ug/L)	Type of Benchmark (AWQC or Tier II)	Source Benchmark	Notes
1,1,2-Trichloro-1,2,2-trifluoroethane	570	32	Tier II	MIDEQ 2003	
1,1-Dichloropropene	UT	UT			
1,2,3-Trichlorobenzene	UT	8	CWQ	CCME 2002	
1,2,3-Trichloropropane	UT	UT			
1,2,4-Trimethylbenzene	310	17	Tier II	MIDEQ 2003	
1,2-Dibromo-3-chloropropane	UT	UT			
1,2-Dichlorobenzene	240	13	Tier II	MIDEQ 2003	
1,3,5-Trimethylbenzene	810	45	Tier II	MIDEQ 2003	
1,3-Dichlorobenzene	200	28	Tier II	MIDEQ 2003	
2,4,6-Trichlorophenol	79	5	Tier II	MIDEQ 2003	
2-Chloroethyl vinyl ether	UT	UT			
2-Hexanone	1,800	99	Tier II	DOE 1996c	
2-Nitrophenol	UT	UT			
4,4'-DDT	0.55	0.001	AWQC	CDPHE 2002	
4-Bromofluorobenzene	UT	UT			
4-Bromophenyl-phenylether	UT	UT	AWQC	CCME 2002	
4-Chlorotoluene	UT	UT			
4-Isopropyltoluene	UT	UT			
Acenaphthene	1,700	520	AWQC	CDPHE 2002	
Alkalinity	UT	UT			
Ammonia	0.077	0.02	AWQC	CDPHE 2002	
Atraton	UT	UT			
Atrazine	100	7.3	Tier II	MIDEQ 2003	
Benzo(g,h,i)perylene	UT	UT			
Benzyl Alcohol	150	8.6	Tier II	DOE 1996c	
beta-Chlordane	UT	UT			
Bicarbonate	UT	UT			
bis(2-Chloroisopropyl) ether	UT	29	CWQ	CCME 2002	
Boron	31,000	1,900	Tier II	MIDEQ 2003	
Bromide	UT	UT			
Bromochloromethane	UT	UT			
Carbazole	72	4	Tier II	MIDEQ 2003	
Carbonate	UT	UT			
Cerium	UT	UT			
Cesium	UT	UT			
Chloride	860,000	230,000	AWQC	EPA 2002	
Chlorodifluoromethane	UT	UT			
cis-Chlordane	UT	UT			
Dalapon	UT	UT			
Decachlorobiphenyl	UT	UT			
delta-BHC	39	2.2	Tier II	DOE 1996c	Value for BHC Other used.
Dibenz(a,h)anthracene	UT	UT			
Dicamba	UT	10	CWQ	CCME 2002	
Dichlorodifluoromethane	UT	UT			
Dichlorofluoromethane	2,600	150	Tier II	MIDEQ 2003	
Dichloroprop	UT	UT			
Dimethoate	UT	UT			
Dinoseb	9.5	0.48	Tier II	MIDEQ 2003	
Endosulfan I	0.22	0.056	AWQC	EPA 2002	Value for alpha-endosulfan used.
Endrin	0.086	0.036	AWQC	CDPHE 2002	
Heptachlor epoxide	0.52	0.0038	AWQC	CDPHE 2002	
Isopropylbenzene	UT	UT			
Magnesium	UT	UT			
n-Butylbenzene	UT	UT			
Nitrite	8950	4470	AWQC	CDPHE 2002	Updated value, calc. using non-salmonid formula [Cl-] = 22 mg/L
N-Nitrosomorpholine	UT	UT			
n-Propylbenzene	UT	UT			
Ortho-phosphate	UT	UT			
PCB-1254	2	0.014	AWQC	CDPHE 2002	
PCB-1260	2	0.014	AWQC	CDPHE 2002	
Phosphate	UT	UT			
Phosphorus	UT	UT			
Potassium	UT	UT			
Prometon	UT	UT			
sec-Butylbenzene	UT	UT			
Silica	UT	UT			
Silicon	UT	UT			
Simazine	UT	10	CWQ	CCME 2002	
Sodium	UT	UT			
Sulfate	UT	UT			
Sulfide	UT	UT			
Titanium	UT	UT			
trans-1,2-Dichloroethene	28,000	1,500	Tier II	MIDEQ 2003	
Tritium	UT	UT			
Uranium	2402	1501	Teir II	CDPHE 2002	Updated value, hardness dependent = 100 mg/L

NOTES: UT = Uncertain toxicity; AWQC = Ambient Water Quality Criteria, CWQ = Chronic Water Quality

Citations by priority

1) CDPHE 2002
2) EPA 2002
3) MIDEQ 2003
4) CCME 2002
5) DOE 1996c
6) NY State 1998